

## CLAIMS

We claim:

1. A removable, plasticizer resistant pressure sensitive adhesive comprising a crosslinked aqueous emulsion polymer comprising:
- 5 (a) at least one hydrophobic monomer selected from an alkyl (meth)acrylate ester of an alcohol wherein the alkyl portion of the alcohol is linear or branched and contains at least 4 carbon atoms;
- (b) about 0.2 to about 10 wt. % of at least one hydrophilic monomer; and
- 10 (c) about 1 to about 40 wt. % of one partially hydrophilic monomer selected from the group consisting of an alkyl (meth)acrylate esters of an alcohol wherein the alkyl portion of the alcohol has 1 to 2 carbon atoms, N-vinyl-2-pyrrolidone, and mixtures thereof; and
- (d) an effective amount of a crosslinker selected from the group consisting of diallyl maleate and compounds represented by the formula:



15 wherein R is selected from the group consisting of hydrogen, methyl, and ethyl, and R' is selected from the group consisting of vinyl (-HC=CH<sub>2</sub>), allyl (-CH<sub>2</sub>-CH=CH<sub>2</sub>), and methallyl (-C(-CH<sub>2</sub>)=CH<sub>2</sub>); wherein said pressure sensitive adhesive does not contain a plasticizer.

- 20 2. The composition of claim 1 wherein said removable, plasticizer resistant pressure sensitive adhesive has an initial peel strength of less than about 0.3 pounds per inch peel force with adhesive failure mode.
3. The composition of claim 1 wherein the amount of monomer (a) in said crosslinked aqueous emulsion polymer is about 50 to about 90 wt. %.
- 25 4. The composition of claim 1 wherein the amount of monomer (a) in said crosslinked aqueous emulsion polymer is about 60 to about 84 wt. %.
5. The composition of claim 4 wherein the amount of monomer (a) in

said crosslinked aqueous emulsion polymer is about 70 to about 80 wt. %.

6. The composition of claim 1 wherein the amount of monomer (b) in said crosslinked aqueous emulsion polymer is about 0.2 to about 5 wt. %.

7. The composition of claim 6 wherein the amount of monomer (b) in  
5 said crosslinked aqueous emulsion polymer is about 1 to about 3 wt. %.

8. The composition of claim 1 wherein the amount of monomer (c) in said crosslinked aqueous emulsion polymer is about 10 to about 25 wt. %.

9. The composition of claim 8 wherein the amount of monomer (c) in said crosslinked aqueous emulsion polymer is about 12 to about 25 wt. %.

10 10. The composition of claim 1 wherein said monomer (a) is selected from the group consisting of isooctyl acrylate, 4-methyl-2-pentyl acrylate, 2-methylbutyl acrylate, isoamyl acrylate, sec-butyl acrylate, n-butyl acrylate, 2-ethylhexyl acrylate, isodecyl methacrylate, isononyl acrylate, isodecyl acrylate, and mixtures thereof.

15 11. The composition of claim 10 wherein said monomer (a) is selected from the group consisting of 2-ethyl-hexyl acrylate, n-butyl acrylate, and mixtures thereof.

12. The composition of claim 1 wherein said monomer (b) is selected from the group consisting of a monoolefinic monocarboxylic acid, a monoolefinic  
20 dicarboxylic acid, 2-hydroxyethyl acrylate, and mixtures thereof.

13. The composition of claim 12 wherein said monomer (b) is selected from the group consisting of acrylic acid, methacrylic acid, fumaric acid, maleic acid, itaconic acid, crotonic acid, oligomeric acrylic acid, 2-hydroxyethyl acrylate, and mixtures thereof.

25 14. The composition of claim 13 wherein said monomer (b) is selected from the group consisting of acrylic acid, 2-hydroxyethyl acrylate, methacrylic acid, and mixtures thereof.

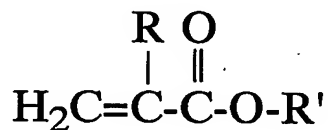
15. The composition of claim 1 wherein said monomer (c) is selected from the group consisting of methyl acrylate, methyl methacrylate, ethyl acrylate, N-vinyl-2-pyrrolidone and mixtures thereof.

16. The composition of claim 15 wherein said monomer (c) is ethyl  
5 acrylate.

17. The composition of claim 1 wherein the amount of said crosslinker is from about 0.2 to about 1.0 wt. %.

18. The composition of claim 17 wherein the amount of said crosslinker is from about 0.3 to about 0.6 wt. %.

10 19. The composition of claim 17 wherein said crosslinker is represented by the formula:



15 wherein R is selected from the group consisting of hydrogen, methyl, and ethyl, and R' is selected from the group consisting of vinyl (-HC=CH<sub>2</sub>), allyl (-CH<sub>2</sub>-CH=CH<sub>2</sub>), and methallyl (-C(-CH<sub>2</sub>)=CH<sub>2</sub>).

20. The composition of claim 19 wherein said crosslinker is selected from the group consisting of allyl acrylate, allyl methacrylate, vinyl acrylate, vinyl  
20 methacrylate, methallyl acrylate, methallyl methacrylate, and mixtures thereof.

21. The composition of claim 20 wherein said crosslinker is selected from the group consisting of allyl acrylate and allyl methacrylate.

22. The composition of claim 17 wherein said crosslinker is diallyl maleate.

25 23. A removable, plasticizer resistant pressure sensitive adhesive comprising a crosslinked aqueous emulsion polymer comprising:

- 5 (a) from about 70 to about 80 wt. % amount of 2-ethylhexyl acrylate, n-butyl acrylate, or mixtures thereof;
- (b) from about 1 to about 3 wt. % of acrylic acid, 2-hydroxyethyl acrylate, methacrylic acid, or mixtures thereof;
- (c) from about 12 to about 25 wt. % of ethyl acrylate; and
- (d) from about 0.3% to about 0.6 wt. % of diallyl maleate, allyl methacrylate, allyl acrylate or mixtures thereof;
- wherein said pressure sensitive adhesive does not contain a plasticizer.

10 24. The use of a removable, plasticizer resistant pressure sensitive adhesive of Claim 1 for the production of labels.

25. The use of a removable, plasticizer resistant pressure sensitive adhesive of Claim 1 for the production of tapes.

26. The use of a removable, plasticizer resistant pressure sensitive adhesive of Claim 1 for the production of films.